

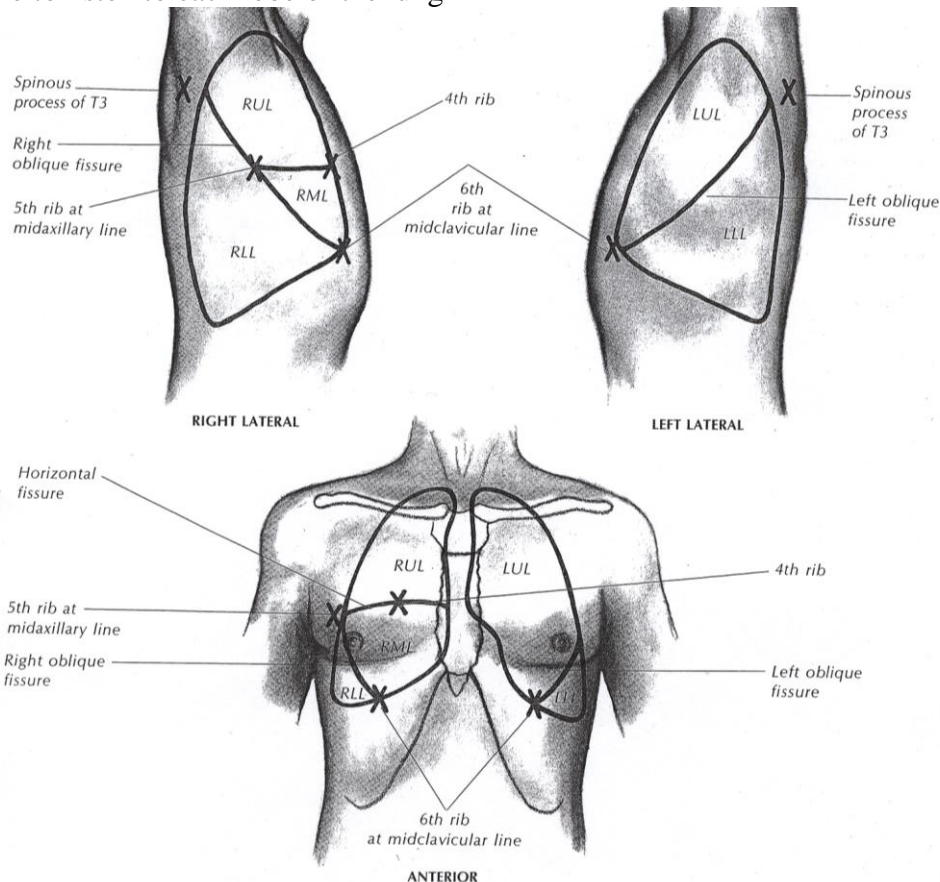
# Clinical Decision Making – Block 2

## • Clinical Decision Making

- - Objectives

## • Clinical Skills

- **Chest Exam**
  - Lung Exam
    - Signs and Symptoms
      - **Dyspnea** – shortness of breath (grade IV is the worst)
      - **Orthopnea** – shortness of breath when lying down
      - **Paroxysmal Nocturnal Dyspnea** – typically associated with pulmonary edema
      - Cough – classify as productive vs. non-productive
        - Productive – suggests bacterial infection
        - Non-productive – suggests atypical infections or non-infectious etiology
      - **Hemoptysis** – blood in sputum, must differentiate between true and false, true is if it actually comes from bronchial or lungs
      - **Pleuritic Chest Pain** – made worse with deep breathing (could be due to infection, neoplasm, etc)
      - Bronchopneumonia often affects only a single lobe of the lung
- Anatomy
  - Midclavicular line
  - midaxillary line (look at patient from side and make lines down from axilla)
  - Scapular line – vertical line down from the inferior angle of the scapula
  - Where to listen to each lobe of the lung



- Inspection
  - Check skin – scarring, laceration, hematoma
  - Check for structural deformities – weird bone structure
  - Respiratory Patterns
    - **Tachypnea** – rapid and shallow breathing
    - **Hyperpnea** – rapid and deep
  - Chest expansion should be symmetric
  - See if they use accessory respiratory muscles
- Palpation
  - If you push on skin and it sounds like cracking then it is subcutaneous emphysema
  - Ribs – check for fracture
  - Tracheal deviation
  - **Tactile fremitus** – feeling the vibration of the larynx through chest wall, should be uniform
    - Decreased in conditions that reduce sound to chest wall, like pneumothorax, pleural effusion, airway obstruction)
    - Increased in things that cause lung consolidation like pneumonia
  - Always compare side to side
- Percussion
  - Tympanic (emphasema), hyperresonant (emphasema, pneumothorax), resonant, dull (pleural effusion, consolidation), flat (collapsed lung)
  - Can also be used to see diaphragmatic excursion (listen to see how far diaphragm goes down)

	RELATIVE INTENSITY	RELATIVE PITCH	RELATIVE DURATION	EXAMPLE LOCATION
FLATNESS	Soft	High	Short	Thigh
DULLNESS	Medium	Medium	Medium	Liver
RESONANCE	Loud	Low	Long	Normal lung
HYPERRESONANCE	Very loud	Lower	Longer	Emphysematous lung
TYMPANY	Loud	*	*	Gastric air bubble or puffed-out cheek

▪ \*Distinguished mainly by its musical timbre

- Auscultation
  - Estimates air flow through tracheobronchial tree
  - Patient must breathe more deeply through an open mouth
  - Adventitial Sounds
    - **Crackles (Rales)** – short, discrete, non-musical sound caused by previously deflated airway suddenly reinflating during inspiration
      - Seen with pneumonia, pulmonary edema, interstitial lung disease
    - **Wheeze (Rhonchi)** – contains musical sound of long duration caused by rapid passage of air through narrowed or obstructed bronchus. Can also cause prolonged expiration
      - Seen with asthma, COPD, obstructive stuff
  - **Pleural Rub** – pleural surfaces inflamed and cause rubbing sound

BREATH SOUNDS	DURATION OF INSPIRATION AND EXPIRATION	RELATIVE PITCH OF EXPIRATION	RELATIVE INTENSITY OF EXPIRATION	NORMAL LOCATIONS
VESICULAR	Inspiratory sounds last longer than expiratory sounds.	Low	Soft	Most of the lungs, away from the trachea and large bronchi
BRONCHIAL	Expiratory sounds are equal to or longer than inspiratory sounds.	High	Loud	Near the large airways ( <i>i.e.</i> , near the manubrium and between the scapulae, especially on the right)

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- Hypoxemia Lung Disease – symptoms include, clubbing of fingers, cyanosis, plethora (red face)
- Cardiac Exam
  - Indications
    - Chest pain, shortness of breath, fatigue, palpitations, syncope, cyanosis, CAD risk factors
    - Past medical history – medications taken, rheumatic fever, murmur
  - Put patient in different positions for different things
  - Make sure to note timing in relation to cycle
  - **Jugular Venous Distension/Pulsation** – allows for estimate of increased right-sided pressures
    - Only way to really test the right side of the heart
  - You can palpate things like ventricular thrill (a murmur you can feel through chest)
  - Auscultation
    - Aorta – below 2<sup>nd</sup> rib next to sternum on right side
    - Pulmonic area – below 2<sup>nd</sup> rib next to sternum on left side
    - Tricuspid area - below 5<sup>th</sup> rib next to sternum on left side
    - Mitral area - below 5<sup>th</sup> rib next to sternum on left side, just medial to midclavicular line
    - Heart Tones
      - **S1** – closure of tricuspid and mitral valve. High pitch, use diaphragm
      - **S2** – closure of pulmonic and aortic valve. High pitch, use diaphragm
      - **Systole** – between S1 and S2
        - Extra sounds could indicate mitral valve prolapse
      - **Diastole** – relaxation phase after S2
        - Extra sounds are **gallops**, listen with bell of stethoscope
          - S3 – rapid ventricular filling
          - S4 – atrial filling into ventricle
      - Extra sounds during systole and diastole – rub or murmur
      - Murmurs
        - Causes – leaky valve, high output, structural defect, altered flow
        - Descriptions – timing, location, radiation, intensity, pitch, quality
        - Maneuvers to get different sounds – ex. Valsalva maneuver
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